In the Claims

Please add new claims

3. (new) A method, comprising

a) distributing a partition worth of data across a plurality of queues according to a weight assigned to each of said queues so that each of said queues has its own sub-partition worth of data, each of said queues capable of holding one or more packet identifiers, each of said one or more packet identifiers pointing to its own packet, said plurality of queues ranging from a highest priority queue to a lowest priority queue; and

b) flowing a flow of one or more packet identifiers from an active populated queue, until:

1) its unpopulated if less than its sub-partition worth of data has flowed, or until

2) its sub-partition worth of data has flowed, or until

3) the combination of flows from those of said queues that have been active results in said partition worth of data having flowed from said those of said queues that have been active, as a whole,

wherein a populated queue is deemed active if it is the highest priority populated queue out of those of said populated queues that have not yet been deemed active, such that populated queues are deemed active in succession until the lowest priority populated queue has been deemed active or until the combination of flows from those of said queues that have been active results in said partition worth of data having flowed from said those of said queues that have been active, as a whole.

4. (new) The method of claim 1 wherein each of said packet identifiers further comprise the same Port_ID value that identifies a port to which said

5. (new) The method of claim 2 wherein said port handles packets destined to the same user.

6. (new) The method of claim 1 wherein one of said queues receives only those of said packet identifiers that each point to its own networking control packet.

7. (new) The method of claim 4 wherein said one of said queues is said highest priority queue.

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8. (new) The method of claim 1 wherein one of said queues receives only those of said packet identifiers that each point to its own real time traffic packet.

9. (new) The method of claim 6 wherein said one of said queues is a second highest priority queue.

10. (new) The method of claim 1 wherein one of said queues receives only those of said packet identifiers that each point to its own fast data traffic packet.

11. (new) The method of claim 8 wherein said one of said queues receives only those of said packet identifiers that each point to its own traditional data traffic packet.

12. (new) The method of claim 1 wherein said partition worth of data is a scheduling cycle partition worth of data, wherein one scheduling cycle partition worth of data per scheduling cycle corresponds to a data rate that is a highest data rate managed by a networking system to which each of said queues belong.

13. (new) The method of claim 1 wherein each of said weights add up to a value that represents 100% or less of said partition worth of data.

14. (new) The method of claim 11 wherein each of said weights are equal.

15. (new) The method of claim 1 wherein each of said weights add up to a value that represents more than 100% of said partition worth of data.

16. (new) The method of claim 1 wherein if more than an active queue's sub-partition worth of data had flowed while it was active, the difference between the amount of data that flowed and said sub-partition worth of data is subtracted from said active queue's sub partition worth of data in order to reduce the flow the next time said active queue becomes active.

17. (new) A method, comprising

a) distributing a partition worth of data across a plurality of queues according to a weight assigned to each of said queues so that each of said queues has its own sub-partition worth of data, each of said queues capable of holding one or more packet identifiers, each of said one or more packet

identifiers pointing to its own packet, said plurality of queues ranging from a highest priority queue to a lowest priority queue;

b) flowing a flow of one or more packet identifiers from an active populated queue, until:

1) its unpopulated if less than its sub-partition worth of data has flowed, or until

2) its sub-partition worth of data has flowed, or until

3) the combination of flows from those of said queues that have been active results in said partition worth of data having flowed from said those of said queues that have been active, as a whole,

wherein a populated queue is deemed active if it is the highest priority populated queue out of those of said populated queues that have not yet been deemed active, such that populated queues are deemed active in succession until the lowest priority populated queue has been deemed active or until the combination of flows from those of said queues that have been active results in said partition worth of data having flowed from said those of said queues that have been active, as a whole; and

c) if:

1)one or more populated queues exist after each of said populated queues has been active, and

2) said combination of flows from those of said queues that have been active results in less than said partition worth of data having flowed from said those of said queues that have been active, as a whole;

then:

1) flowing one or more additional flows from said one or more populated queues until said partition worth of data has flowed from said queues as a whole, or until

2) each of said queues is unpopulated if each of said queues becomes unpopulated before said partition worth of data has flowed from said queues as a whole.

18. (new) The method of claim 15 wherein each of said packet identifiers further comprise the same Port_ID value that identifies a port to which said queues belong.

19. (new) The method of claim 16 wherein said port handles packets destined to the same user.

20. (new) The method of claim 15 wherein one of said queues receives only those of said packet identifiers that each point to its own networking control packet.

21. (new) The method of claim 18 wherein said one of said queues is said highest priority queue.

22. (new) The method of claim 15 wherein one of said queues receives only those of said packet identifiers that each point to its own real time traffic packet.

23. (new) The method of claim 20 wherein said one of said queues is a second highest priority queue.

24. (new) The method of claim 15 wherein one of said queues receives only those of said packet identifiers that each point to its own fast data traffic packet.

25. (new) The method of claim 22 wherein said one of said queues receives only those of said packet identifiers that each point to its own traditional data traffic packet.

26. (new) The method of claim 15 wherein said partition worth of data is a scheduling cycle partition worth of data, wherein one scheduling cycle partition worth of data per scheduling cycle corresponds to a data rate that is a highest data rate managed by a networking system to which each of said queues belong.

27. (new) The method of claim 15 wherein each of said weights add up to a value that represents 100% or less of said partition worth of data.

28. (new) The method of claim 25 wherein each of said weights are equal.

29. (new) The method of claim 15 wherein each of said weights add up to a value that represents more than 100% of said partition worth of data.

30. (new) The method of claim 15 wherein said flowing one or more additional flows further comprises flowing packet identifiers from a next queue, said next queue following a previous queue that flowed an additional flow to consume a previous distribution of a partition worth of data.

31. (new) The method of claim 15 wherein if more than an active queue's sub-partition worth of data had flowed while it was active, the difference between the amount of data that flowed and said sub-partition worth of data is subtracted from said active queue's sub partition worth of data in order to reduce the flow the next time said active queue becomes active.

32. (new) An apparatus, comprising:

a scheduler that

a) distributes a partition worth of data across a plurality of queues according to a weight assigned to each of said queues so that each of said queues has its own sub-partition worth of data, each of said queues capable of holding one or more packet identifiers, each of said one or more packet identifiers pointing to its own packet, said plurality of queues ranging from a highest priority queue to a lowest priority queue; and

b) controls a flow of one or more packet identifiers from an active populated queue, until:

1) its unpopulated if less than its sub-partition worth of data has flowed, or until

2) its sub-partition worth of data has flowed, or until

3) the combination of flows from those of said queues that have been active results in said partition worth of data having flowed from said those of said queues that have been active, as a whole,

wherein a populated queue is deemed active if it is the highest priority populated queue out of those of said populated queues that have not yet been deemed active, such that populated queues are deemed active in succession until the lowest priority populated queue has been deemed active or until the

combination of flows from those of said queues that have been active results in said partition worth of data having flowed from said those of said queues that have been active, as a whole.

33. (new) The apparatus of claim 30 wherein each of said packet identifiers further comprise the same Port_ID value that identifies a port to which said queues belong.

34. (new) The apparatus of claim 31 wherein said port handles packets destined to the same user.

35. (new) The apparatus of claim 30 wherein one of said queues receives only those of said packet identifiers that each point to its own networking control packet.

36. (new) The apparatus of claim 33 wherein said one of said queues is said highest priority queue.

37. (new) The apparatus of claim 30 wherein one of said queues receives only those of said packet identifiers that each point to its own real time traffic packet.

38. (new) The apparatus of claim 35 wherein said one of said queues is a second highest priority queue.

39. (new) The apparatus of claim 30 wherein one of said queues receives only those of said packet identifiers that each point to its own fast data traffic packet.

40. (new) The apparatus of claim 37 wherein said one of said queues receives only those of said packet identifiers that each point to its own traditional data traffic packet.

41. (new) The apparatus of claim 30 wherein said partition worth of data is a scheduling cycle partition worth of data, wherein one scheduling cycle partition worth of data per scheduling cycle corresponds to a data rate that is a highest data rate managed by a networking system to which each of said queues belong.

42. (new) The apparatus of claim 30 wherein each of said weights add up to a value that represents 100% or less of said partition worth of data.

43. (new) The apparatus of claim 40 wherein each of said weights are equal.

44. (new) The apparatus of claim 30 wherein each of said weights add up to a value that represents more than 100% of said partition worth of data.

45. (new) The apparatus of claim 30 wherein if more than an active queue's sub-partition worth of data had flowed while it was active, said scheduler takes the difference between the amount of data that flowed and said sub-partition worth of data and subtracts it from said active queue's sub partition worth of data in order to reduce the flow the next time said active queue becomes active.